OUTLINE SHEET 4-6-1
Environmental Controls

A. Introduction

Even the lowest ranking shipboard engineer can make immense contribution to the preservation of the environment by taking steps not to pollute it. This lesson covers the common causes of shipboard pollutants and steps taken to minimize, if not eliminate it.

B. Enabling Objectives

4.15 **DESCRIBE** the problems that threaten the environment.

4.16 **DESCRIBE** the controls used to reduce the risks to the environment.

C. Topic Outline

1. Introduction
2. Overview
3. Oily Wastes
4. Sewage
5. Plastics Waste
6. Summary and Review
7. Assignment

ASSIGNMENT SHEET 4-6-2
Environmental Controls

A. Introduction

This material is to be completed prior to the material being covered in class.

B. Enabling Objectives

Refer to enabling objectives in Outline Sheet 4-6-1.

C. Study Assignment

1. Read Fireman NAVEDTRA 12001, pages 13-3 to 13-4.
2. Read Information Sheet 4-6-3

D. Study Questions

1. What is the definition of an oily waste?
2. What are the hazards that may be present around sewage systems?
3. What are the dangers posed by plastics to the environment?

INFORMATION SHEET 4-6-3
Environmental Controls

A. Introduction

This information describes environmental protection.

B. Reference

Fireman NAVEDTRA 12001
NSTM Chapter 593

C. Information

I. As Navy personnel, our primary concern is to control the pollutants aboard the ship to minimize the pollution risk to ourselves and the environment.
II. Fuel oil and chemical cleaning solvents are used onboard Navy ships.
  A. Spills and leaks are possible and most of these spills collect in the ship's bilges.
  B. Bilge water contaminated by pollutants is pumped into the ship's oily waste tank.
III. Oily waste is any solid or liquid substance that can produce a surface film or sheen when discharged into clean water.
  A. Most oily wastes are derived from petroleum products.
  B. Waste oil is oily waste that contains only a small amount of water but cannot be re-used by the ship.
  C. Any mixture that causes an oily sludge or emulsion to be deposited beneath the surface of water is oily waste.
  D. Oily waste comes usually from:
    1. lubricating oil tank cleaning operations
    2. leakage and drainage from equipment and systems
    3. stripping from contaminated oil-settling tanks
    4. ballasting water used in fuel tanks.
IV. Discharging oil and oily waste products within 50 miles of land is prohibited by law.
  A. Accidental discharge or spill must be quickly cleaned up by the ship.
  B. Every ship is equipped with an Oil Spill Containment and Cleanup Kit, which consists of tools and absorbents to soak up and remove the oil from the water.

V. Sewage treatment systems are being installed onboard ships to control

pollution of inland and coastal waters.

A. Sewage is not allowed to be discharged within 3 miles of land.
B. Sewage is held in tanks until discharge is allowed.
C. Some ships are capable of incinerating sewage while others use biological means to break down sewage.

VI. There are distinctive hazards to personnel operating the sewage systems. Among these hazards are:
A. explosive gases
B. toxic vapors
C. biological contaminants.
D. All spills are considered extremely hazardous to personnel.

VII. Plastic wastes are segregated from nonplastic waste and are retained on board.
A. Plastics are stable in the marine environment for hundreds of years.
B. Although not toxic to marine organisms, it causes death to marine life through entanglement and ingestion.
C. Whenever possible, plastic disposable items are replaced with non-plastic items.
D. Plastic waste may be disposed of beyond the 50 mile limit provided it is properly packaged and weighted to sink.